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EVERY MAN HIS OWN PRINTER;

OR,

LITHOGRAPHY MADE EASY.

ALOIS SENEFELDER,

INVENTOR OF LITHOGRAPHY — BORN 1771. DIED 1834.

SPECIMEN OF CHALK DRAWING UPON TRANSFER PAPER

Printed by Waterlow & Son's Patent Autographic Press.

EVERY MAN HIS OWN PRINTER;

OR,

Lithography made Easy:

BEING

AN ESSAY UPON LITHOGRAPHY IN ALL ITS BRANCHES, SHOWING
MORE PARTICULARLY THE ADVANTAGES OF THE
"PATENT AUTOGRAPHIC PRESS."

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INTRODUCTION.

The art of Lithography is of comparatively recent date, having been discovered in the year 1800, by Aloys Senefelder, an actor at one of the theatres of Munich, in which city he obtained the exclusive privilege of practising it; but it was not until after the lapse of a period of nearly a quarter of a century that it was successfully introduced into this country. Within the last few years, however, its advancement has been so rapid that it has now become a most important branch of the art of printing, and some of its artistic productions are so excellent and varied as to claim a place in the Fine Art World with the principal *chef-d'œuvres* of the present day.

Lithography is based entirely upon chemical principles, viz.—the property possessed by calcareous stones of absorbing, with equal readiness, both aqueous and unctuous or saponaceous substances, and the naturally repellent nature of such bodies when brought in contact with one another. The stone usually employed is a compact limestone, obtained principally from Bavaria; Zinc is sometimes used on account of its portability, but it is not so easily worked, nor are its results so satisfactory.

The writing or drawing is made upon the stone, with a prepared ink of a greasy nature, either directly, or by means of a transfer from prepared paper, called Transfer paper; the stone is then moistened with water, which is, of course, repelled wherever there is the least particle of ink; the printing ink, composed of oil, varnish and lampblack, is then applied by a roller, the oily particles of which, being also repelled by the moisture of the stone, adhere only to the lines of the writing or drawing. The roller being again passed over the damp stone deposits sufficient ink upon the drawing or writing to produce a black impression upon paper by the application of the necessary pressure.

The Patentee of the Autographic Press having been engaged for some years in the business of Lithography, and finding a continually increasing demand upon its most simple but principal branch, viz.—that of multiplying copies of written documents, as circular letters, prices current, &c., was induced to consider the possibility of so simplifying the Lithographic Press in its construction and mode of working, as to enable any person of ordinary intelligence to perform all the operations of this form of lithography without being compelled to seek the aid of a professional printer. Complete success resulted from the pursuance of this idea, and a patent was obtained for the "Autographic Press;" this name being adopted, as it was at first intended merely to facilitate the production of a few copies of manuscripts of a private nature, for which the merchant or banker would ordinarily employ the more valuable services of confidential clerks to copy by hand. In a short time, however, the press came into use, not only in the counting-house of the merchant, but in the offices of the principal railway and assurance companies; proving a valuable accessory, and, from the demand at once made for it, evidently supplying a want.

Considerable success has also attended its use in India and the Colonies, from whence many unsolicited testimonials have been received. A gentleman in the civil service at Madras, who has been most successful in the use of his press, and who has sent specimens of drawings which would not disgrace a practised lithographer, writes :—“ I have no hesitation in expressing my opinion that the Autographic Presses might be introduced with very great advantage in the Government offices, not only at the presidencies, but in many of those of the provinces of India.”

The Autographic Press differs from the Lithographic, principally in its greater simplicity and the application of the necessary pressure for obtaining the impressions; the principle, and materials employed are however identically the same with both.

In the Autographic Press the pressure is produced by means of a *cylinder,* which *revolves* as the stone passes under it; this cylinder is fixed at once, and for all the impressions required from any one particular stone, when it is first placed in the bed of the press. In the Lithographic Press, the impressions are taken by means of a piece of wood called a *scraper,* which is *fixed* in the head of the press, and under which the stone is pulled. This scraper being fixed, it is necessary to remove and re-apply the pressure every time an impression is taken; and this is done by pulling down a lever, which raises the stone to the height of the scraper.

A further disadvantage arising from the scraper being *fixed,* is that it offers so great a resistance to the stones that to prevent their breaking they are required to be from

2½ to 3 inches thick, and even then they are more frequently broken than are the thin ones used with the Autographic Press.

Again, as the pressure cylinder of the Autographic Press acts with the same force and produces similar results either way, the bed of the press presents the stone for printing, first at one end of the press and then at the other—impressions being obtained whichever way the cylinder revolves. On the contrary, in the Lithographic Press, the bed must be pulled through, the pressure released, and then pulled *back again,* before the stone can be recharged with ink for another impression.

Another advantage in connection with the Autographic Press, and to which some considerable importance is attached, is, that by merely introducing into the bed of the press a metal plate having a true surface that will not yield, a form of ordinary printing type may be inserted in the place of the stone, and impressions taken as well, as quickly, and as safely as by the common printing press. The page of "Notices of the Press" at the end of this work has been printed in this way.

It is evident, then, from the foregoing, that, independent of the increased labour of the Lithographic Press, by reason of its bulk and construction, the Autographic Press possesses many advantages over it; but the inventor, in introducing it to the public, has had no desire to depreciate the merits of the Lithographic Press, or trespass upon the business connected with that trade;—his object has solely been to provide for those who *could not use* a Lithographic Press (and who would never employ a lithographer), a means of obtaining for themselves copies of writings or sketches, which would be good enough for their own purposes, either in relation to commerce, or, in mere gratification and amusement for an idle hour.

The Autographic Press having been lately introduced into public and private schools, for multiplying copies of lessons in music, drawing, geometry, &c. (see plate 3), and obtained a patronage, amongst artists, amateurs and draftsmen, which was not anticipated, it has been thought desirable to prepare the following pages, and endeavour to supply, in a manner easily to be understood, a work of reference, which should answer the numerous enquiries that have been made of the manufacturers for further instructions in the art of Lithography than those given with the presses for ordinary use.

The accompanying illustrations being *bonâ fide* productions from the Autographic Press, show of what it is really capable; and it is hoped that the ample directions, together with descriptions that are given of the materials and implements used in Lithography, will provide the means not only for recreation and intellectual amusement, but that even those who may be desirous of making Lithography a profitable pursuit, will find sufficient information to lead them to the most beneficial results.

EVERY MAN HIS OWN PRINTER;

OR,

LITHOGRAPHY MADE EASY.

PART I.

Lithography is properly divided into two distinct departments—that of the artist, or writer, and that of the printer; and as the object proposed is to explain to those who know nothing of either, the readiest method of practising both, they are treated separately, in order to save repetition; while, by marking out each process under a distinctive head, the operator may readily turn from one part to the other, for the purpose of obtaining the information he requires, either as artist, writer, or printer.

TRANSFER WRITING.

The paper used for transferring writings or drawings to the stone is prepared on one side only, and, to avoid mistake, this is usually slightly colored and glazed; but should any doubt exist, the prepared side may be tested by moistening the corner, which should feel glutinous to the touch. Transfer paper is very sensitive, and will retain and reproduce upon the stone any finger-marks or dirt which may gather upon it; it should, therefore, be taken great care of, and when being used, a piece of clean paper should be placed under the hand, so that the fingers may not in any way touch the surface. To prevent the possibility of an error, whatever is required to be written on transfer paper, should first be fair copied (unless the writer is very correct) upon ordinary paper; as, although alterations *can be made*, it is better to avoid the necessity for making them. Pencil-marks are not reproduced on the stone, therefore lines for writing on may be lightly drawn with safety. The transfer paper stretches slightly by the pressure applied in transferring to the stone: this must consequently be allowed for, if it is wished to print on paper of any particular size. The transfer ink, which, when liquid, is of a rich brown colour, should before using be well shaken in the bottle. If found to be lighter in colour than is agreeable, a little may be poured into a saucer, and Indian ink mixed with it; bearing in mind that, however small a quantity is added, it tends to deteriorate its chemical properties, and thus, the less that is used, the better. In all cases where presses are sent abroad, solid transfer writing-ink should accompany them, which may be made liquid in a saucer, as described at page 19.

Metallic pens may be used, but they must be very fine, held with a light hand, and every care taken not to scratch up the composition of the paper, by a repetition of the stroke while the ink is wet. Quill pens are sometimes used, but require care and practice to prepare. A quill of the best quality should be chosen, and scraped with glass till it becomes sufficiently fine, and then cut as an ordinary pen, but with a very fine nib. A pen that has been previously used with common writing ink is objectionable. For large letters or print, a fine-pointed camel-hair pencil should be used, and care must always be taken that the ink is not put on too heavily (piled up as it were), as it will be found to spread upon the stone when passed through the press. The finest marks made with the lithographic ink upon the paper will be transferred to the stone, if they are even perfect enough to be seen with a lens.

If an error be committed, there are several ways of correcting it; but whichever method be adopted, it must be done neatly and thoroughly, or the place where the attempt has been made will be but a patch of black upon the stone when the inking roller is applied. The easiest method is to remove the ink by India rubber, in the following manner: A hole must be cut in a piece of hard, clean paper, sufficiently large to expose only the part which requires to be corrected, and protect the remainder; the ink is then removed by gentle rubbing. A more effective means is by cleanly washing away the ink with spirits of turpentine applied by a camel-hair pencil, and drying it off by holding the back of the paper at some distance from the fire. In doing this, the ink must be just dissolved with the spirit and soaked up with blotting paper, again washed, and soaked up until quite clean. A third method, and perhaps the safest and easiest of all, is to cut out with a penknife the piece of paper where the error exists, and replace it by another piece a little larger, which will adhere sufficiently to the back by moistening with the tongue the composition on the corners of the paper.

The finest and best transfer writing that is produced is done very slowly, care being taken that every stroke be perfect. The best writers will frequently outline the whole of their work, and thicken the down strokes afterwards. The upper portion of plate 1 and the whole of plate 2 are given as specimens of what may be done in this way. In ornamental writing, no attempt must be made to produce the thick parts of Old English, German text, &c., at one stroke of the pen, as too much ink is thereby laid on, producing nothing but blots when printed. All solid work should be "painted up."

To produce a good ordinary mercantile running-hand, the pen should be held lightly, and passed rapidly over the paper; the quickest hands will be most successful in this style. (See lower half of plate 1.)

Retransfers are sometimes made from copper-plates, and also from type. The former are only used when a great number of copies are required of one particular subject, and of which ten, twenty, or forty transfers are made upon the same stone; but the latter may be used to advantage in combination with Lithography, when a very close description is required to a diagram or other subject, and there is but small space to put it in. A specimen of this kind is submitted in the list of prices of materials that will be found at the end, which is transferred from type to the stone, and printed by the Autographic Press.

Drawings or manuscript upon transfer paper should be transferred to the stone as soon as finished, or within a few days after, as the ink, by long exposure to the atmosphere, becomes dry, and in course of time perishes altogether.

DRAWINGS UPON TRANSFER PAPER.

Drawings may be made upon transfer paper with pen and ink, and also with chalk. In the former case, the same paper is used as for writing, and, in the latter, a paper specially prepared with a grain similar to drawing paper.

Alterations in drawings upon transfer paper must be entirely avoided, and it is therefore advisable that the outline of the subject should be traced before commencing.

If the subject be an original drawing, or a portrait from life, it may be sketched in pencil; but if a copy, the outline should be traced with a hard pencil, or in pen and ink, upon ordinary tracing paper, and then, with a piece of red chalk paper under it, the tracing should be securely fixed by weights over the transfer paper, and carefully gone over with a tracing point, thus leaving what is termed a "retracing" upon the transfer paper. Tracing points (as shown at fig. 1, plate 9) may be purchased ready made, but very good ones may be made by driving into a cedar stick, with pincers, a stout needle, ground to a blunt but smooth point. This should be held a little out of the perpendicular, and not leaned on too heavily, or it will be found that too much of the chalk from the retracing paper has been impressed upon the transfer paper, which tends to confuse the draftsman and clog the pen in working. A retracing cannot be too faint, so long as it can be seen, and its strength must therefore be determined by the draftsman's sight.

Drawings in ink upon transfer paper may be made with any pens that are convenient, provided, however, they are suitable to the nature of the subject or its purpose. They are frequently cut from ribbon steel, with scissors made expressly; but as there is some difficulty in the cutting, very good substitutes will be found in the Autographic, Mapping, or Crow Quill Pens, which are specially manufactured for lithographic purposes. For heavy shading, a finely-cut quill should be used, as before described, for writing. Plates 3 and 4 are given as illustrations of drawings in ink upon transfer paper; the first being a rough sketch of a lesson in music or geometry for educational purposes, and the latter a copy of an old etching.

Drawings in chalk upon transfer paper (see Frontispiece) are not frequently made, but offer an excellent medium when a sketch is required, and a grained stone is not readily procurable. It is well adapted for sketching from nature either a portrait or landscape, as the sketch may be at once laid upon the polished stone, and impressions taken from it; but it is not recommended for a highly-finished drawing, although some specimens drawn by Amateurs upon this paper, and printed by the Autographic Press, have borne fair comparison with drawings made direct upon the stone.

Tracing paper is sometimes coated with a preparation, so that it may be used as transfer paper, by tracing at once with the prepared ink. It will not produce very fine work, but is serviceable when a few copies of a rough plan or drawing are wanted in a hurry. It is much used in lithographic offices for fac-similes of writings, &c.

The whole process of writing and drawing upon transfer paper having now been described, it follows, in due course, to treat of that of drawing upon stone; but those who may be desirous of following up this first part of the subject, and at once proceed to the printing, will find, at page 33, a description of how to lay the transfer upon the stone.

DRAWING UPON STONE.

THE PEN AND INK STYLE.

This is not so difficult as is generally imagined. All who can draw upon paper may draw upon stone, with a little increase of care and neatness. The first thing to overcome is reversing. It requires but little consideration to perceive that all prints—be they engravings, lithographs, or woodcuts—are produced upon the paper the reverse of that upon the plate, stone, or block; therefore, a drawing, portrait, or figure, to be correctly copied, must be drawn upon the stone backwards, to be reproduced in the impressions so as to correspond with the original. In some cases—for instance, landscape compositions—reversing is immaterial; but if there are figures using their right hands, and the drawing is not reversed upon the stone, the impressions taken from it represent the figures using the left hand.

Reversing is very easily performed. A tracing of the subject desired to be drawn upon the stone should first be made upon tracing paper, as previously described; but in retracing, the paper should be laid upon the stone face downwards. Here, then, after retracing, will be found a perfect reverse of the picture; and, until custom habituates to drawing everything backwards, the copy should be placed before a looking-glass, and the drawing made upon the stone from the reflection.

Drawing in ink upon stone, a specimen of which is given in plate 5, requires a stone polished, as for a transfer, but more carefully finished, and without scratches. Before retracing it should be wiped over with a piece of clean linen, damped with spirits of turpentine. This process (although not in general practice) will be found greatly to facilitate the flow of ink from the pen or brush.

Ink for drawing upon stone is sold in solid sticks, and ready blackened. It should be mixed fresh, at least, once a day, by rubbing it dry on the inside of a saucer, and adding, of cold distilled or rain-water, sufficient to dissolve the quantity required, by rubbing up with the fingers; being careful that there be no foreign matter, more especially acid substances, upon the hands at the time of mixing. In very cold weather, the saucer may be warmed a little; but this should not be done when it is possible to avoid it, as the ink tends to thicken when mixed in a *hot* saucer. When thoroughly mixed, it may be poured into a small bottle, or used from the saucer, as is most convenient. Practice will soon show the proper working consistency of the ink.

Pens or brushes may be used; but pens produce more solid work. They are cut from ribbon steel, with fine scissors, as before mentioned, about an inch long, and moulded to the shape of a pen, the nibs short, and the slit made with one cut of the scissors—so fine as not to be observable till tested. They are used in holders made of cedar-sticks and light quill-barrels. Brushes, when preferred, must be cut to suit the subject, at the discretion of the draftsman, from the best sable-hair pencils that are to be met with. They must be reduced with scissors, hair by hair, until a perfect point is produced and they are found to work properly.

All lines perfectly straight should be drawn with a ruling pen (see fig. 2, plate 9) and parallel rules: for the lithographic stone these pens are made of extra-hardened steel, and they may be ground fine upon a hone, as they wear away with use. They should be held upright, and will be found to produce a finer and neater line than can possibly be made by the writing pen. Circles should be drawn with a bow pen, as represented at fig. 3, plate 9.

Corrections may be made by removing the surface of the stone with a penknife; but care must be taken that a hole is not made, or the work put in its place will not print. Scrapers are made for this purpose (see fig. 4, plate 9), which, being broad in the blade, a large surface of the stone is taken off without penetrating it.

When the drawing is finished and perfectly dry, to prevent the work being rubbed, it should be covered with a thick solution of gum arabic, passed carefully over it with a sponge, or a wide, flat brush; it may then be placed aside till dry, before printing.

A small quantity of acid (not sufficient to be perceptible to the taste) may be added to the gum, which will impart greater security to the work.

THE CHALK STYLE.

Chalk drawings upon stone, as represented at plate 6, require a grained stone—that is, with a surface somewhat resembling drawing paper, so as to obtain the most appropriate texture for producing the proper effects of light and shade. A drawing in chalk, made upon a polished stone, would be nearly all one black tint. The graining of the stone is performed by placing two stones face to face, with very fine sand between them, and working the top one over the bottom one with a circular motion of the hands; but as this is a troublesome operation, and requires great practice to obtain anything like a *good* grain, and as upon this the success of the drawing depends, it is advisable either to order grained stones with the press, or to send them out to be done by those well accustomed to it, giving directions for a fine, medium, or coarse grain, according to the nature of the subject. Previous to the drawing, or "chalking in," as it is termed, a tracing and retracing of the subject should be made, as before described.

Chalks are used hard or soft, as the nature of the work may require, and are numbered—No. 1, hard; No. 2, medium; and No. 3, soft. For outlining, No. 1 should be used; for laying in tints, No. 2; and for foreground and heavy touches, No. 3. The best lithographic chalks are manufactured in Paris, but they may be readily obtained in London. The lighter the chalk-holders the better. They may be constructed by rolling pasted paper round a cylinder of the same dimensions as the chalk, leaving the ends open, as a squib case, so that, as the chalk is cut away, it may be pushed out for further use. For foreground tints, &c., the ordinary porte-crayon will be found preferable (see fig. 5, plate 9). A dozen of these holders should be at hand, with chalks ready pointed; for it will be found troublesome during the drawing to be stopped continually to cut the points. The points are cut the reverse of a pencil point, *i. e.*, upwards from the point (see fig. 6, plate 9), and the point once well cut, will last some time, by the aid of a rough piece of paper, upon which it may be sharpened as required. In outlining, care should be taken not to fill the grain. The great beauty of a lithographic drawing is its softness; and hard spots in the outline should be avoided. Small pieces of chalk will, in course of drawing, become detached, and rest upon the stone: these must be removed by a 2 or 3-inch flat hair brush, or a hare's foot, dusted lightly over the stone. In working chalk tints, commence by broad lines. Although these lines are not intended to show in the printing, and should be absorbed when the tint is complete, yet they give a desirable transparency. A brilliant effect is produced in a tint if it is worked in lines across one another, at an angle of about 45 degrees. To produce deep effects, chalk No. 2 should be used, which is softer in its nature, and more easily worked. For great depth, or *positive black*, lithographic ink is sometimes introduced; but it fills up the grain, producing harshness of outline, easily detected when the drawing is printed. In preference, the chalk No. 3 may be moistened with the tongue, which produces as great a depth as is ordinarily required, and harmonises better with the grain of the surrounding work.

The whole of the drawing should be worked in equal proportions, so that the effect may be observed as it proceeds. When the drawing is completed (and it must be carefully examined *to see that it is complete* before proving, as no alterations or additions can be made afterwards), it should be etched in the following manner:—

The stone must be placed in an inclined position, over a sink where the water will easily run away, and a basin filled with pure water, into which a little nitric acid should be poured, to produce the strength and taste of lemon-juice. The proper strength of the etching preparation may be tested by dropping a little on the corner of the stone, which should, in a few seconds, slightly effervesce. This having been ascertained, the etching water should be poured over the top of the stone, so that it washes down equally all over the drawing, and runs off at the bottom; it may then be reversed, and the etching liquid again applied in the same manner. The stone may now be laid flat, and the drawing looked well over sideways, to observe whether any portion of the liquid has been repelled by the chalk, and, consequently, not etched. If this is the case, the remaining portion of the liquid may be thrown over, and the stone held under a tap, that it may be well washed, and the etching liquid entirely removed. During this operation neither the hands, sponge, or cloth must be applied to the stone to assist in the washing, but it must be left entirely to the action of the etching liquid and water.

The etching of a chalk drawing is an important and delicate operation, as the success of the printing depends upon the proper strength of the preparation: a bold subject requiring a larger prodortion of acid than a delicate one.

The stone being etched, a thick coating of pure gum-water should be applied, and allowed to dry, the stone being placed horizontally.

TINTS.

Tints to chalk drawings are produced by an additional printing. A thorough knowledge of the mode of producing them will save the draftsman much time and labour; and, though requiring two printings to complete a subject, will be found so much more pleasing as to be well worth the extra trouble. Plates 6 and 7 are given as illustrations of the different styles, the black of both being printed in the same manner, but plate 7 having the addition of a tint stone. This tint is produced upon a polished stone, in the following manner:—The exact contour of the border of the drawing is first marked out in pencil; four small holes are then drilled into the stone, with a needle, at the four corners where the border joins, in order to obtain a true register in printing; the border lines are next drawn in with a ruling pen, either with lithographic ink or gum and acid, and the part of the stone remaining outside the border is covered with a thick coating of gum and acid, and left to dry. When dry, the inking roller is passed over the stone, the printing ink adheres to the part which is left plain; and being refused by that part where the gum and acid has been laid on, leaves a solid mass of black ink of corresponding size to the drawing. This being washed out with turpentine, is then rolled up with tint ink of the desired colour, as is hereinafter described in the division of the work devoted to the instructions for printing.

When a tint is required with full and half lights, the manipulation becomes more difficult, and is performed in the following manner:—A stone must be procured with a deep, coarse grain upon it, and passed through the press with a new full impression of the drawing laid upon its face: this will leave upon the stone what is termed a "set off," or light transfer of the drawing, to serve as a guide to the correct outline of the subject. The corners of the border should be drilled as before; and with a sharp point or graver, the principal features of the subject, together with the border line, must be scratched in tolerably deep, and the border of the stone, up to the edge of the drawing, covered with a solution of gum arabic: such parts also as are intended to be solid whites, should be filled in with a camel-hair pencil with the same solution, and the stone placed about a yard from the fire, so that it becomes evenly yet thoroughly warm. When the stone is warm, but not hot, the tint ink (which is very much like the ink used for drawing upon stone, but is softer and prepared expressly) should be rubbed boldly all over the subject, keeping it as even as possible. When it is well covered, the stone should be rubbed over with a piece of warm thick felt or cloth, until the preparation becomes well worked into the grain, and appears of a brownish colour, with the outline showing up of a much darker hue, by reason of the tint ink having penetrated the scratches. This part of the operation being satisfactorily performed, the light tints may be got in by gently scraping off the preparation with a sharp flat scraper, and to get these soft and transparent, they should be worked in lines, crossed and re-crossed. Having produced all the light effects, the solid or full-body tints should be put in with stone-ink, mixed rather thick, and laid on with a brush, and then put aside to dry, ready for printing.

It will be readily understood by the foregoing remarks, how much is gained in effect by the addition of tinting to a lithographic drawing; for, although we have described but one tint which is intended to be printed all in one colour, yet there are in this tint four gradations: first—the solid whites, which are left in the tint by the gum showing in relief against the dark tints and black; second—

the flat tint, which is produced by the rubbing in of the preparation, and the effect of which single operation, without the addition of lights, half-tones, or solids, is seen in plate 7; third—the half-tints, produced by the scraping; and fourth—the full-body tints, produced by the ink.

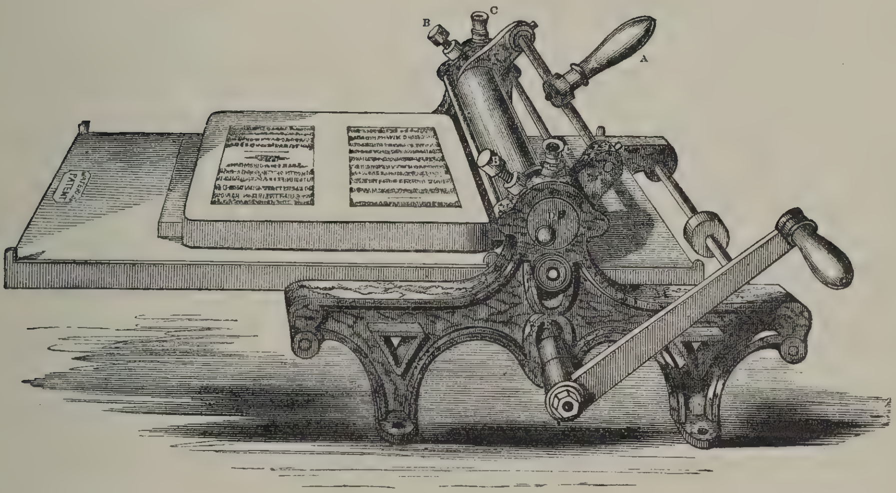
It has lately become much in vogue with lithographers to put two tints to a drawing—the one of a warm brown umber, for the ground, buildings, &c., and the other, which is made in the same way as the first, of a bluish tone, for the clouds; this, of course, adds much to the beauty of a drawing, but entails the trouble of printing from three stones. Following up this branch of the art, we are led to chromo-lithography, which consists in making separate stones, as described, for every colour, some with half tints, and others solid, and printing one upon the other, until the required depth of tone and colour is obtained.

ENGRAVING UPON STONE.

This branch of lithography is practised to a very small extent in England, though universally so in Germany, where it has been brought to so great a degree of perfection, that it is sometimes difficult to distinguish it from steel-plate engraving. The process is simple; though, to cut into the stone, or, more properly speaking, to use the graver, requires greater practice than merely to draw with a pen, brush, or crayon; still, for some things, it is invaluable, and occasionally details will occur which cannot be shown in any other way. We have given a specimen at plate 8, to show for what purposes engraving is available. The stone for engraving should be polished as smooth as can be, and perfectly free from scratches; it should be washed over with a solution of gum and acid, in which solution the acid should be present only in sufficient quantity to be just perceptible to the taste: this should remain until dry; it should then be placed under a tap of clear water, and the gum nearly all rubbed off with the palm of the hand: the stone should be again dried, and red ochre scraped over the face of it, and rubbed in equally all over with a piece of cotton-wool, until it is well covered, and of a bright red colour. A retracing of the subject should be made as before described; but, instead of using red chalk paper, black should be used. Practised engravers, instead of using gum and acid, frequently use gum only; and in lieu of red ochre, lampblack is used, laid on wet with a bristle brush, and smoothed over while wet with a flat camel-hair brush. This method economises labour, as the stone does not require such deep cutting, and more delicate marks tell; but as those who are unaccustomed to it invariably cut deeper than is necessary, they are recommended to use gum and acid, as first proposed. Diamonds, gravers (see fig. 7, plate 9), and needles are used for engraving on stone, the breadth of the point depending, of course, on the nature of the work; and it is only necessary to bear in mind that it is not on the *depth* but on the *width* of the scratches that the effect of the work depends. When the subject is complete, it is covered with palm oil, which finds its way into every line and mark of the engraving, and yet is repelled by that part of the stone which has been prepared by the gum and acid, and through which, of course, the graver has cut.

This being the last subject proposed to be treated in the branch of Lithography relating to the draftsman, for instructions as to printing the reader is referred to the Second Part, where the different subjects will be found arranged in the same order as in the preceding pages.

PART II.



THE PRESS.

Above is a correct representation of the Autographic Press, with the stone fixed in the bed, and upon which may be seen the outline of the subject to be printed.

An Autographic Press, when first purchased from the manufactory, is sent out with the pressure already adjusted for the stone supplied with it; but to increase or decrease the pressure, the screws, B B, should be loosened with the lever which accompanies the presses (see fig. 8, plate 9), and the handle, A, which, it will be seen, is affixed to and acts upon the upper or pressure cylinder, must be raised for greater, and lowered for less, pressure. The screws should then be again tightened, to prevent the cylinder from changing its position when the stone passes under it. The necessary amount of pressure is difficult to explain, as it of course depends not only upon the nature of the subject, but the strength of the individual working the press. Chalk work requires greater pressure than ink work, the latter being, as it were, all one colour; while the former possesses more delicate tints, which do not hold the same amount of printing ink. Ordinarily, the pressure obtained by one hand is sufficient; but the operator must be guided by his own power, bearing in mind that it is possible to break both stone and press if violence be used. The handle, A, if found in the way, whilst printing, may be unscrewed and laid aside, its only use being to raise or lower the pressure cylinder.

In course of time, when the stone has been *frequently* used, it may become so thin as not to reach the pressure cylinder when lowered to its full extent; this difficulty is overcome by placing under the stone a piece of thin and even millboard. The press should be kept as free as possible from dust and dirt, and when not in use, it is better to keep it covered up. C C are cups for applying oil to the eccentric action of the pressure cylinder; and at D and E apertures will be found on either side of the press, for oiling the bearings of the cylinders.

The oil should not be allowed to become dry, as it is liable to accumulate, and fractures have been known to occur, entirely arising from attempts to work the press without proper attention in this respect; and it will readily be understood, that if the oil is dry, and a stoppage occurs in the working parts, something must give way.

TO MAKE A TRANSFER.

The stone should be perfectly clean and dry, and the requisite pressure adjusted, unless already effected by the same stone having been previously worked. If it is not so, a sheet of clean paper should be laid over the stone, and the stone passed under the cylinders, to be tested as described. Clean water must be provided, and the sponges carefully rinsed. The transfer should be placed, face downwards, on a clean sheet of soft paper (thick blotting-paper is preferable, as it soaks up the superfluous moisture), and the back damped with the water-sponge, keeping it perfectly flat, to prevent any moisture reaching the prepared side; it must be equally damped, the sponge being passed over it lightly several times, until it becomes thoroughly moist, but not overcharged with water. It should then be held by the corners, taking care that the prepared side does not rub against itself, and laid flat upon the stone, without shifting or dragging. It should be understood, that what is required is an equal and sufficient deposit upon the stone, of the chemical ink with which the writing or drawing is made; and it will be observed that the composition on the transfer paper, upon which, and not upon the paper itself, the ink actually lies, is, by the damping process, loosened as it were, and when the pressure from the press is applied, the composition adheres to the stone, carrying with it, of course, the chemical ink of the writing or drawing. As all depends upon a good transfer, too much care cannot be bestowed on it. The transfer being laid upon the stone in a moistened state, a sheet or two of stout soft paper should be laid carefully over it, and on this again the pasteboard;* it may then be passed through the press backwards and forwards several times. The transfer having now adhered to the stone, it should be again damped with the sponge, and again passed under the press: this may be done a third time, after well soaking the paper. It should then be damped and rubbed all over with the fingers until the paper crumbles up, but on no account rubbed into holes, through which the water would get, and make the work weak. When it has been well rubbed, and especially on those parts under which the work is known to exist, the crumblings should be removed with the sponge, and the paper peeled off from the corners, being careful not to rub the work with the fingers; this being done, the composition, which is still left on the stone, though the paper is removed, should be allowed to dry, and in a few minutes after washed off with a clean sponge and water, and the stone prepared with a thick coating of gum, spread carefully over it with the gum sponge. The process of transferring is the same with every description of work drawn or written upon transfer paper of any sort, and also with retransfers, be they from plate, wood, stone, or type. Having now arrived with transfers at the same point in the process as we left off in the description of drawings made upon the stone—that is, after they had been gummed in and left ready for printing, the next stage which follows, and which we will now proceed to describe, is the process of Printing.

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* Great care should be taken that no moisture reaches the pasteboard, or it will cockle and crease in passing through the press, rendering it unfit for further use, and sometimes breaking the stones. A thin sheet of zinc is sometimes substituted for the pasteboard, but either will in course of time become rolled out or spread, by the constant pressure to which it is subjected, and as soon as this becomes evident, by an appearance of creases in various parts, it must be replaced by a new one.

TO PRINT INK-WORK.

When a drawing or transfer is completed on stone, it must be rolled up and etched previous to printing. A piece of printing ink, about the size of a common nut, should be spread on the slab with the palette-knife, and distributed with the roller, by working it up in various directions until the slab is uniformly covered by the ink. If the ink be found too stiff to work up readily, a small quantity of varnish, about half that of the ink, may be added. The stone should then be damped with the wetting cloth, and the roller passed over it, up and down, gently, allowing it to work easily in the leather handles. The stone must be kept constantly damp, as water repels the printing ink from the uncovered part of it and keeps it clean; the work which is on the stone, in its turn, repelling the water, but receiving a charge of ink from the printing roller. The damping of the stone is important: if too wet, the roller slips and injures the work, and if any part is dry, the ink adheres to it; should it do so, the damping cloth, or the next rolling in, will remove it. The wetting cloth should, at the commencement, be dipped in water and wrung out, in order that no more water may be retained in the cloth than is necessary to moisten the stone all over. If the roller be passed too rapidly over the stone, it will not properly charge the work; if passed too slowly, and with rests, the work will be slurred. When the work assumes a solid and black appearance, wash the stone all over with a little etching preparation,* which may presently be washed off again with the water-sponge. Should there be any dirt on the edges of the stone, it may be removed with the slip of speckled or snake stone; and if any spots appear amongst the writing, they can be scraped away with a penknife or scraper—in all cases applying the preparation to such parts afterwards. The stone may now be again damped with the wetting-cloth, recharged with ink by the roller, the paper intended to receive the impressions laid down upon it, with the soft sheets and pasteboard, the handle turned, and the impression is taken by once passing through the press. This may be repeated *ad infinitum,* bearing in mind that, for the first eight or ten impressions, the work requires more rolling-in than afterwards. In taking a long number of impressions, the pasteboard will be found to curl up with the pressure: this may be obviated by reversing it each time of pulling through. If a great number of copies are wanted in a short space of time, a second impression may be taken without inking—it would be faint in colour, but readable.

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* The etching preparation is composed of gum arabic solution and nitric acid, which to the taste should be of the strength of vinegar; but the proper proportions may be ascertained by dropping a little on the corner of the stone, which should just bubble or boil up. It need hardly be suggested that great care should be taken in etching; for, if the preparation is too strong, all the fine parts of the work will disappear; and if not strong enough, the work will be thick and heavy.

Having printed the required number of copies, if it be desired to print the same subject at a future time, the stone may be covered with gum water, and allowed to dry. On resuming work, the gum should be washed off with clean water. When it is desired to print on both sides of the paper, the requisite number having been printed on one side, the paper should be laid down to receive the impression of the second side; and over the first side, a sheet of thin, soft paper should be placed to receive the set-off, which would otherwise soil the pasteboard, and thereby spoil the subsequent copies. A clean set-off sheet should be used for every impression;

after use they may be dried, and will serve for future printings, care being taken that they *are* dry, or they will themselves set off on to the printing paper, when used a second or third time. If the subject consists of several pages, one of which would occupy but half the stone, another page may be transferred by its side, and the two printed at one operation.

TO PRINT DRAWINGS IN CHALK

Requires much more careful treatment than that of drawings in ink, inasmuch as the ink with which the drawing is made being liquid, penetrates the stone, and is absorbed by it, retaining a firmer hold than chalk, which is laid on to the surface in a dry state, and is retained, therefore, by a slighter affinity to the stone than the liquid ink.

The stone being adjusted in the press, and the ink well mixed and rolled up, the gum which was left to dry upon the stone should be washed off with the sponge, and the roller applied. If the stone is too wet, the roller will slip without turning, but by using a slight pressure, with a gentle motion of the wrists, the roller will soon be found to work freely in the handles. The wet sponge must be again applied to the stone, and the rolling-in renewed. The action of the roller must not be all in one direction; the stone should be turned in the press, and the roller again applied the contrary way, that the drawing may have an equal share of ink all over. If any black spots appear (which may arise from accidents in the drawing, or otherwise), they may be removed by picking out—that is, puncturing the grain of the stone with a needle point; a little etching preparation being afterwards applied to such places with a camel-hair pencil. The stone may then be again covered with a thin coating of gum, and laid by as long as convenient. When it is desired to commence taking impressions, the gum must be washed off carefully, the drawing charged with printing ink by the roller, the paper laid down, the stone passed through the press, as already described, and the printing proceeds.

TINT PRINTING.

Chalk drawings intended to receive a tint, must have defined points at opposite corners of the subject, to receive the perforations necessary for the needles, by means of which the register of the tint is properly effected. If the subject has a border (which is most usual) the holes for the register may be made in either of the two corners at opposite angles—whichever may be most convenient; but if there is no border, some points must be marked in opposite corners of the drawing before it is printed. The black, or drawing stone having been printed upon damp paper, the paper must not be allowed to dry before the tint is added, as it is liable to contract, and the tint would not be found to fit. A pair of register points, consisting of strong, thin needles, driven into wooden holders, being provided, the impressions from the black stone must be perforated at the register marks, ready for the addition of the tint. For the printing of the tint it will be necessary to have an ink slab and roller devoted to the purpose, as the black ink could never be so entirely cleaned away as not to injure the delicacy of the tint. The ink with which tints are printed is composed of colour extracted from the ordinary tubes sold by artists' colourmen, and mixed up on the ink slab with a little thin varnish. The colours usually employed are umbers, chromes, cobalts, indigo, &c., &c.; but of course tints of any colour may be produced by combination. The colours, as sold in the tubes, may at any time be lightened by the addition of a little flake white ground upon the ink slab by the aid of a muller (see Fig. 9, Plate 9).

The tint stone having been prepared, and previously rolled up in black ink, in order to see whether there are any defects in it, must be rubbed over with a small piece of thick flannel, soaked in turpentine, until the whole of the black ink is dissolved; which should then be washed off with a sponge and water, until the stone is quite clean—nothing remaining but the stain of the tint. The roller with the coloured ink may now be applied, and the work charged and rolled up, as previously described, taking the same care with the first rolling-in, as before.

The mode of handling the rollers is very important, and great attention must be bestowed upon it, more especially in tint-printing; for the operator, when he becomes used to it, may either force the stone to receive more ink, or take the ink up from the stone; he may vary the force of the tint in particular parts of the subject requiring it, thereby changing, by the mere management of the roller, the whole effect. When the stone is thoroughly charged with the coloured ink, one of the drawings should be taken up, and the needles run through the back of it, in the holes which have been made in the corners of the border; the needles are then placed in the corresponding holes on the stone, and the impression slipped off them on to the stone face downwards; the needles are then removed, the soft sheets laid down, and the impression taken as usual.

This, then, is the whole process of tint printing; and it is in this manner by the repetition of stones for different colours, all printed upon one subject, that the beautiful drawings in chromo-lithography are produced. But it should be mentioned that when a large number of copies and many colours are required, a machine, adapted to the lithographic press, is used, which is not only more exact, but affords a considerable saving in time.

TO PRINT ENGRAVING.

The stone having been covered with pure palm oil, and allowed to remain some little time in order that the oil may thoroughly enter the engraved parts, it may be washed over with the sponge and clean water, when all the gum and colouring matter with which the stone was at first prepared will be removed. A small piece of thick flannel should now be rubbed on the ink slab, until it is well saturated with ink, and this applied to the work on the stone, rubbing it over the engraved lines, when the printing ink will be gradually taken up by the palm oil, and the whole work will become charged. The stone may be etched and printed in the usual manner, but using a soft, damp paper, and with rather a heavy pressure. If the work is heavy and intricate, it will be better printed by a dabber, as represented at Fig. 10, Plate 9, which, being worked up on the ink slab, is rubbed over the stone, leaning rather heavily, so that the lines of the engraving may, as it were, scrape the ink off as it passes over them. Of course, the stone must be kept damp as in ordinary printing.

PRINTING INK

Is used of different thicknesses, according to the nature of the subject, but it is usually sent out in a fit state for printing ordinary work. Varnish always accompanies it for the purpose of thinning when required. The requisite thickness of the ink is easily ascertainable. In rolling it up on the slab, it should work up easily, though it must not be supposed, because it does not spread immediately, that it is too thick—it requires at first a little working up with the roller, to get it in order: the stiffer it can be worked the better; but it may be so stiff that it will not readily adhere to the work on the stone. Varnish, when required, must be added in small quantities and well united with the ink, by means of the palette-knife or a small muller. Too much ink must not be spread on the slab at one time, or, upon rolling up the work, it will be found to clog it, and the impressions will be thick. If this is the case, a little should be scraped off the slab with the palette-knife, laid aside, and the remainder well rolled up and distributed on the slab. After taking impressions with too much ink, the work becomes blurred, but on rolling in a second time with less ink, it will become clear again. Pale impressions arise either from having too little ink on the slab, or too little rolling, the remedies for which are obvious.

After some time, and more especially in warm climates, the varnish with which the ink is made, dries up, leaving the ink too hard for use: in this case it is advisable to take it out of the pot, and grind it up with a muller, adding as much varnish as is required. When well ground, it may be returned to the pot, which should always be kept covered.

The ink will not keep if exposed to the air, and that which has been left on the ink-slab will not do to print with after it has been left many hours; at every new printing, therefore, the ink must be scraped off the slab, and fresh ink put on. It is advisable to keep the slab covered when not in use, in order that no dust may become mixed with the ink.

PRINTING PAPER.

Any kind of paper may be used, wet or dry, but when required for a large number of copies it is better damped. If used dry, a soft glazed paper should be selected; if damped, the damping may be done the previous day, or half an hour before printing, by sponging alternate sheets, and then placing them under a board, with a weight on the top.

Some papers will be found better adapted for printing dry than others. Hand-made papers will not print well dry, as they generally contain a greater quantity of size than those made by machine.

For very fine ink-drawings, and for all chalk work, plate-paper should be used, slightly damped.

In order to lay the printing paper always in the same place, an angle, thus ┐, should be marked, with a piece of pewter or silver, in the right hand top corner of the stone, to which the corner of the sheet must be laid.

TO PREPARE THE STONE FOR A FRESH SUBJECT.

When the desired number of copies has been worked off, and the stone is required for another subject, it should be removed from the press to a convenient place for repreparing, as a trough or sink, where water is ready to the hand. If the work has not been on the stone a great length of time, it will be sufficient to first rub it off with the pumice-stone and water until no trace of the work remains, then polish well with the water of Ayr polishing stone. The old work being quite obliterated, the stone should be placed either under a tap that the water may fall over it, or it should be sluiced with water from a jug until perfectly free from the milky-looking fluid produced by the action of the polishing stone: it should then be placed before the fire to dry, and, in very cold weather, may be allowed to get a little warm if required for transferring. In grinding or polishing the stones, be not afraid of water, or of rubbing away too much of the stone, as no sensible diminution can be made. If the work has been on the stone for a considerable time, it should be ground off with sand by means of another stone in the manner described for graining at page 21.

CONCLUSION.

In concluding this short treatise on Lithography, which, though apparently referring more particularly to the autographic press, is equally applicable to the Lithographic—as it will be found that the principles and *modus operandi* are mainly the same throughout, the only difference being in the construction of the presses themselves—the reader is cautioned most strongly upon the great importance of exercising cleanliness and care in the practice of the art; cleanliness being absolutely essential to ensure success *at all*, and care being found to save infinite time and trouble. It has been shown, that all greasy matters, such as soap, tallow, oil, &c., have an affinity for the stone, and these, therefore, should be carefully avoided in connection with the sponges and cloth. When these require cleansing, they must be rinsed in pure water, but not in any vessel that has contained grease, such as a wash-hand basin, from which, however apparently clean, sufficient soapy matter might be imbibed by the cloth or sponge to injure the work. The same result will ensue if a towel be used (even if clean) for damping the stone, for if it has ever been washed with soap, the effect will be more or less visible in the course of the printing. The materials, for the same reason, should be kept in a neat and clean state, the bottles always corked, and the ink and ink-slab covered. When a subject has been printed, and the press is not likely to be again required for some time, the roller and ink-slab should be scraped quite clean with the palette-knife, and the old ink thrown away. The ink must on no account be left on the roller, as it hardens and spoils the leather, rendering it unfit for use when required. Should it become so from any inadvertency, it must be covered with lard, laid at some distance before the fire for several hours, then well scraped with the palette-knife, and rolled up for an hour or so upon the ink-slab, with varnish only.

At all times when the press and materials are not in use, let them be carefully preserved from dust.

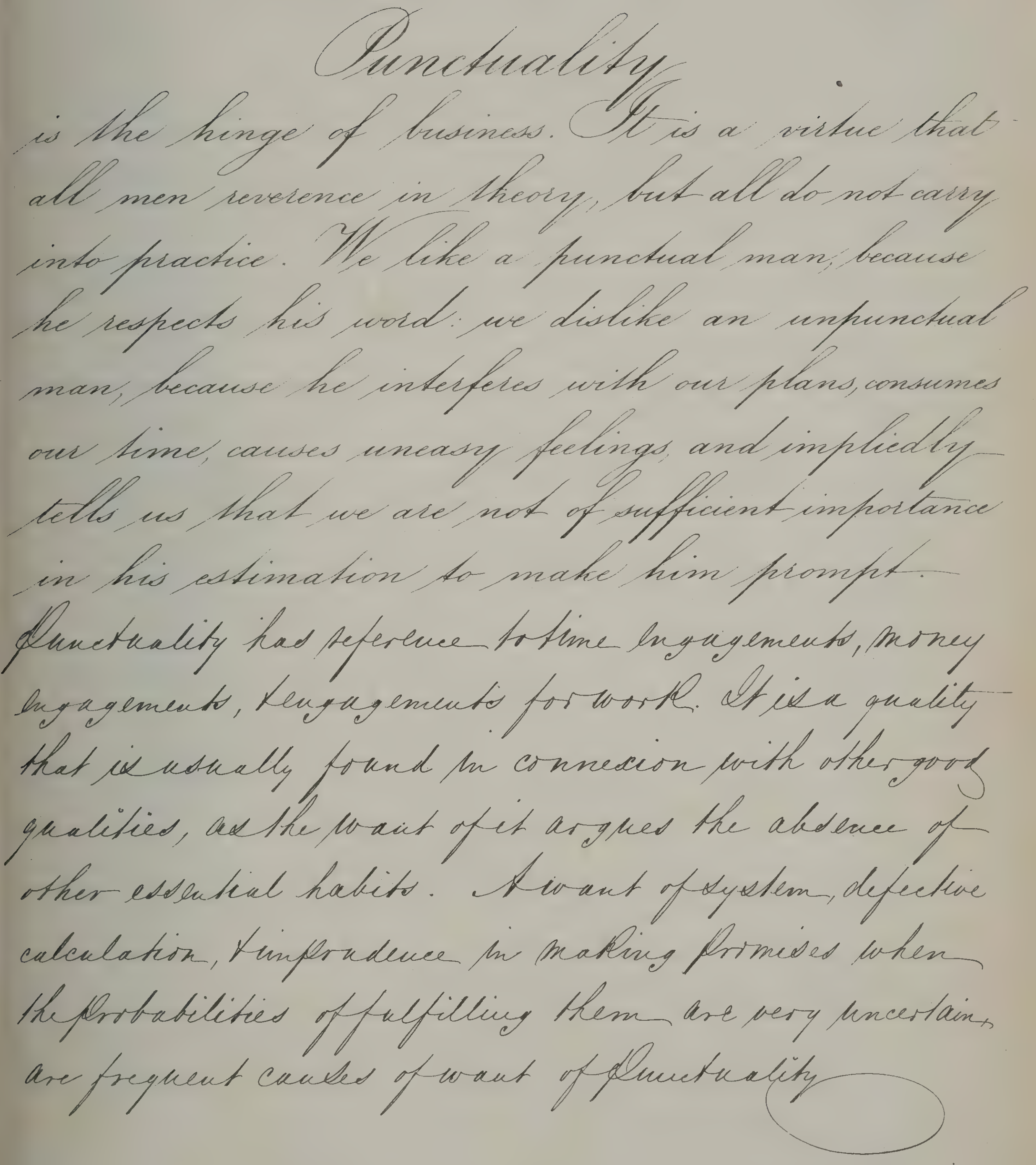
Having now entered faithfully into all the details of the art of

Lithography, and given the ground-work of each particular branch, with every desire that it should be fully understood, it is urged on all those who may be desirous of practising this interesting art, either for amusement or profit, that they must not be dismayed by one or two failures at the commencement, as these are very likely to take place with beginners; but they should go to work patiently, strictly following the instructions, and they will find, by so doing, and with the addition of a little confidence, that the results will be successful.

THE END.

Waterlow and Sons, Printers, Carpenters' Hall, London Wall, London.

PLATE 1.



Punctuality

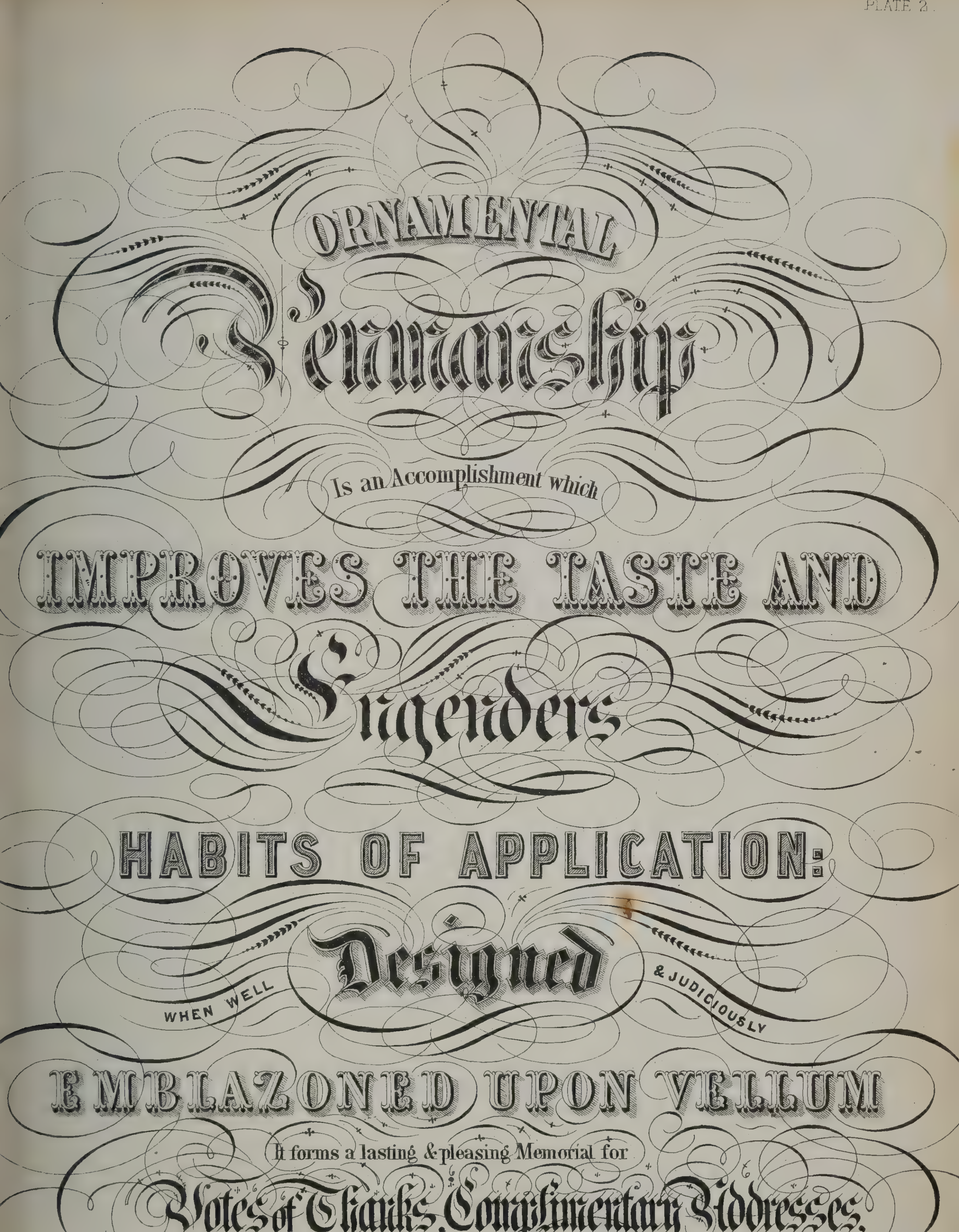
is the hinge of business. It is a virtue that all men reverence in theory, but all do not carry into practice. We like a punctual man, because he respects his word: we dislike an unpunctual man, because he interferes with our plans, consumes our time, causes uneasy feelings, and impliedly tells us that we are not of sufficient importance in his estimation to make him prompt.

Punctuality has reference to time engagements, money engagements, & engagements for work. It is a quality that is usually found in connexion with other good qualities, as the want of it argues the absence of other essential habits. A want of system, defective calculation, & imprudence in making promises when the Probabilities of fulfilling them are very uncertain, are frequent causes of want of Punctuality

SPECIMEN OF STUDIED & RUNNING HAND WRITING.

Printed by Waterlow & Son's Patent Autographic Press.

PLATE 2.



ORNAMENTAL

Penmanship

Is an Accomplishment which

IMPROVES THE TASTE AND

Engenders

HABITS OF APPLICATION:

WHEN WELL Designed & JUDICIOUSLY

EMBLAZONED UPON VELLUM

It forms a lasting & pleasing Memorial for

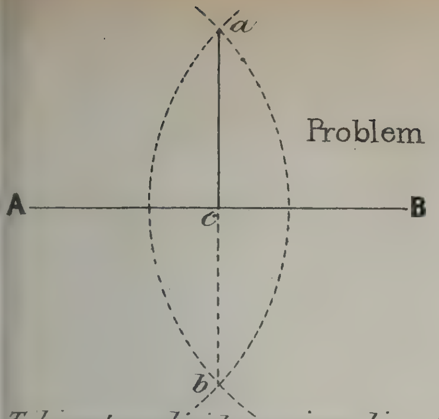
Votes of Thanks, Complimentary Addresses,

&c. &c.

SPECIMEN OF WRITING UPON TRANSFER PAPER.

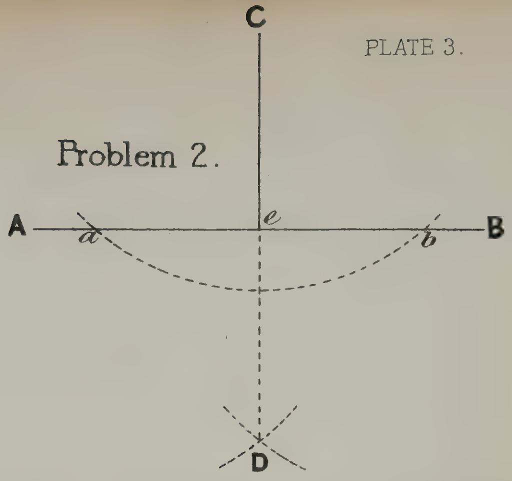
Printed by Waterlow & Sons' Patent Autographic Press.

Problem 1.



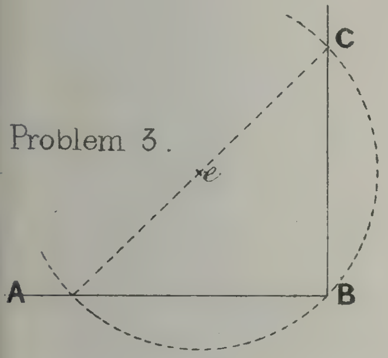
To bisect, or divide a given line **A B** *into two equal parts.*

Problem 2.



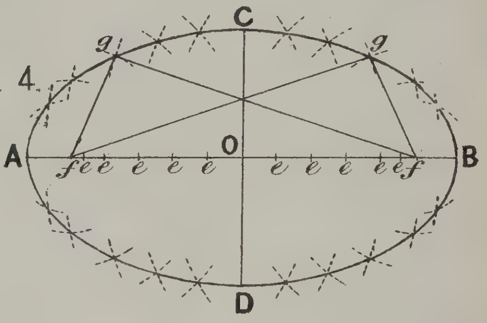
From a given point **C**, *over a given line* **A B**, *to let fall a perpendicular.*

Problem 3.

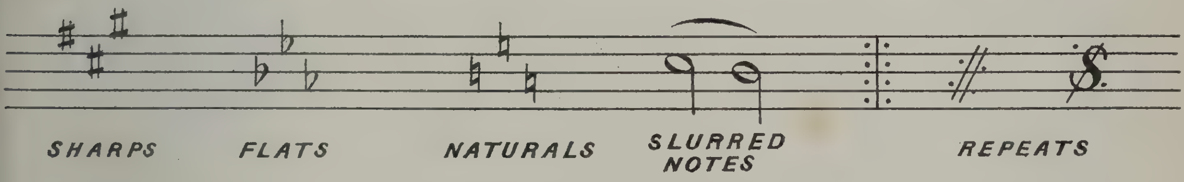


To erect a perpendicular from the end of a given line, as at **B**.

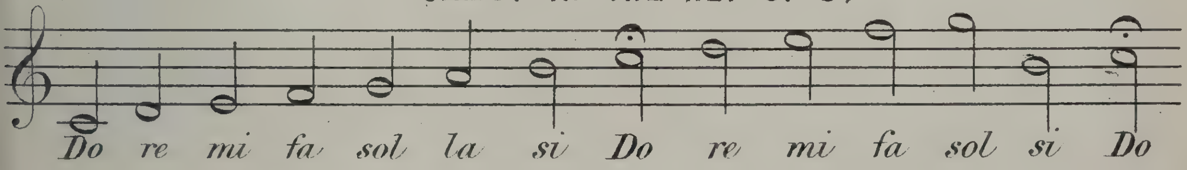
Problem 4.



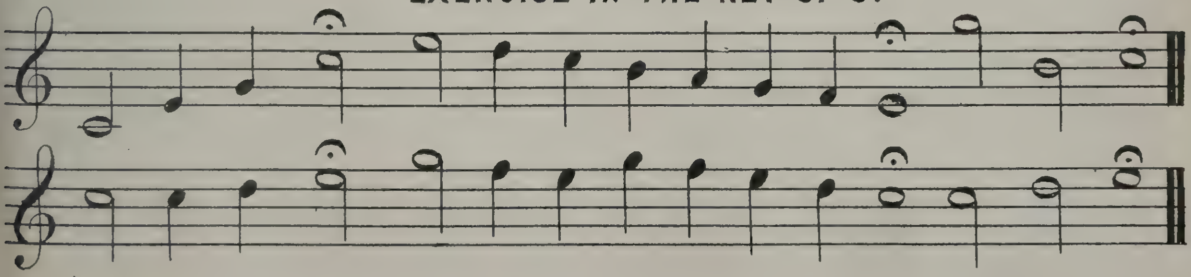
To describe an Ellipsis, the transverse & conjugate diameters being given.



GAMUT IN THE KEY OF C.

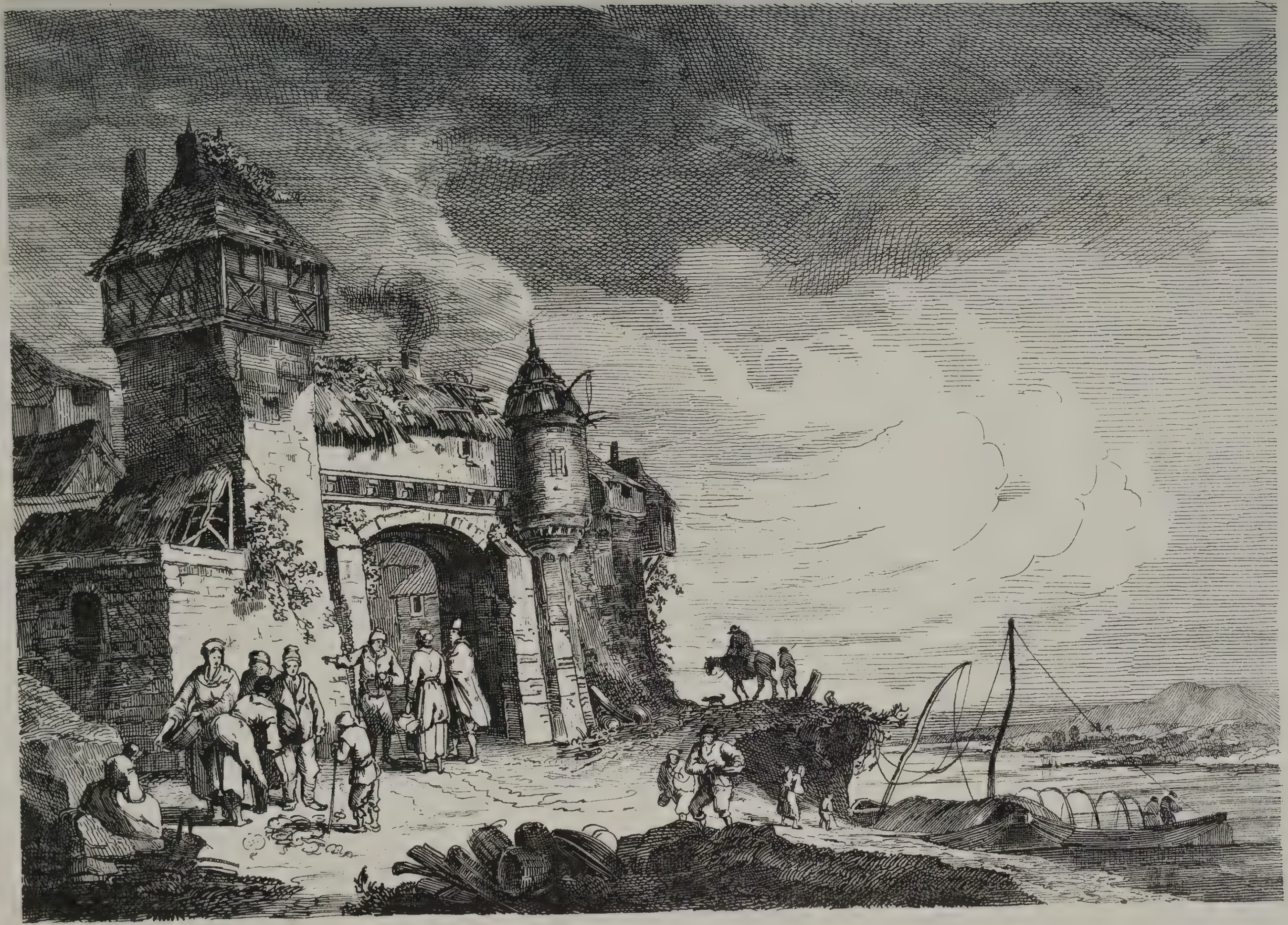


EXERCISE IN THE KEY OF C.



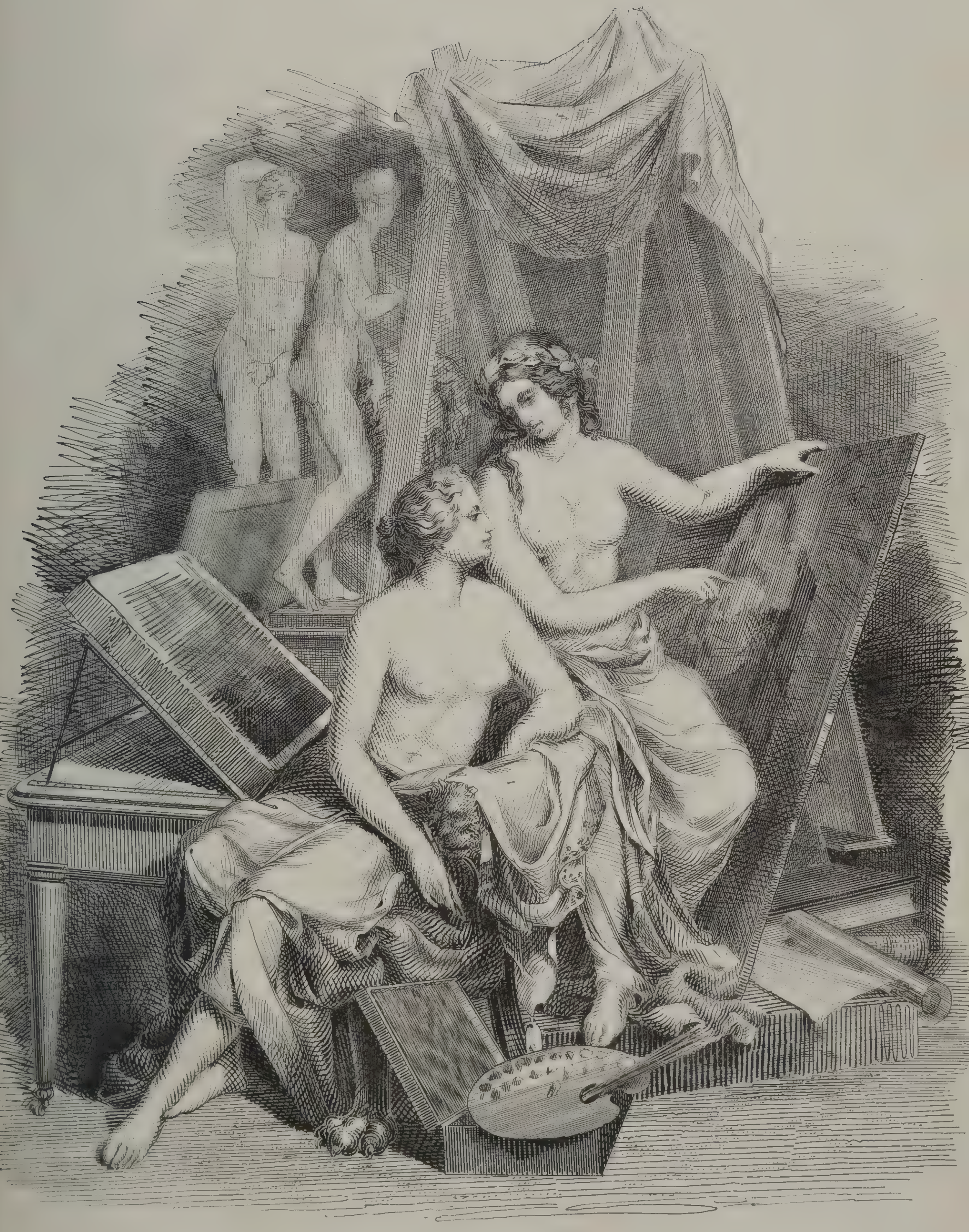
GEOMETRICAL & MUSICAL LESSONS FOR SCHOOLS.

Printed by Waterlow & Sons' Autographic Press.



SPECIMEN OF PEN & INK DRAWING UPON TRANSFER PAPER.

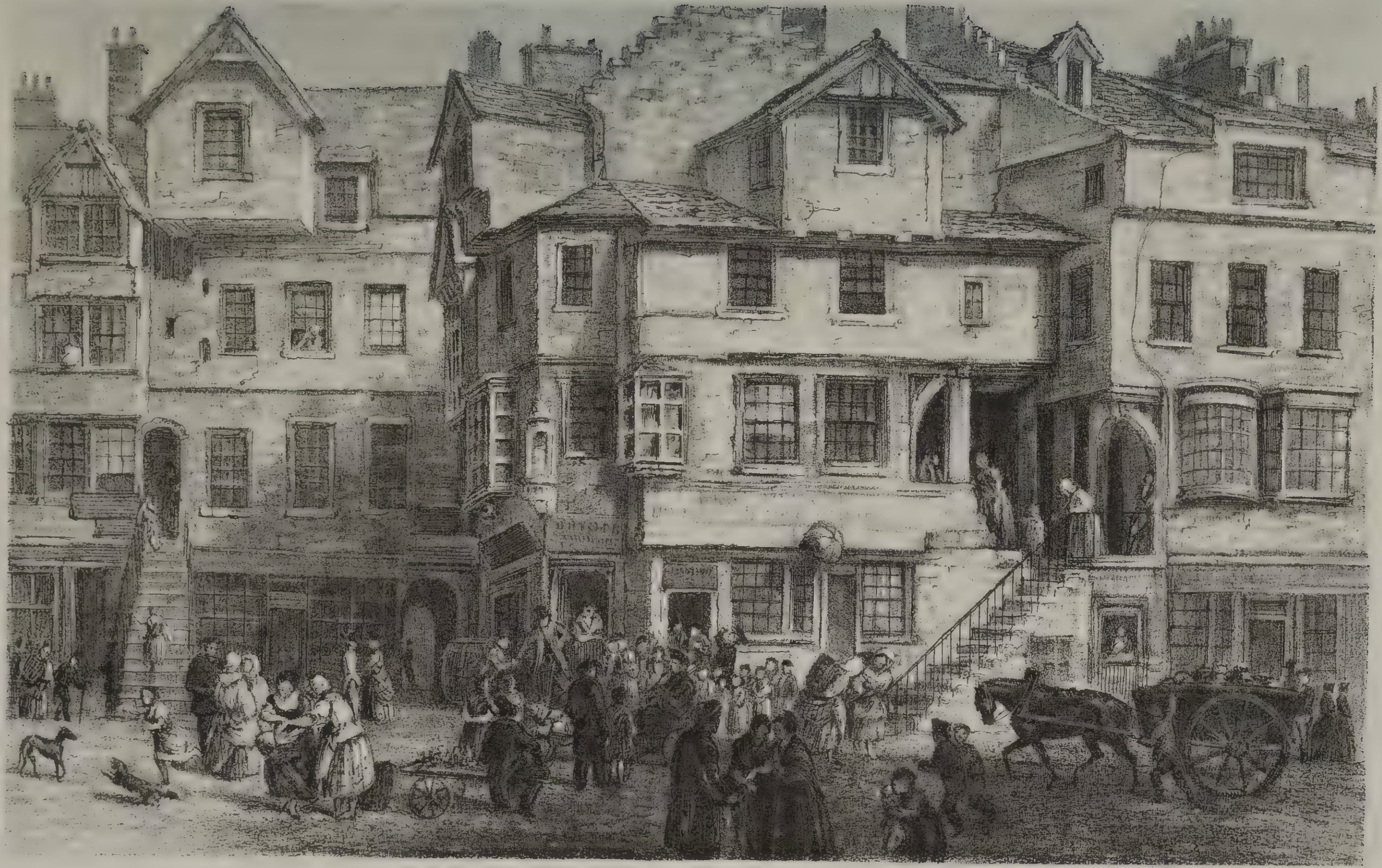
Printed by Waterlow & Sons Patent Autographic Press.



SPECIMEN OF PEN & INK DRAWING UPON STONE.

Printed by Waterlow & Sons' Patent Autographic Press.

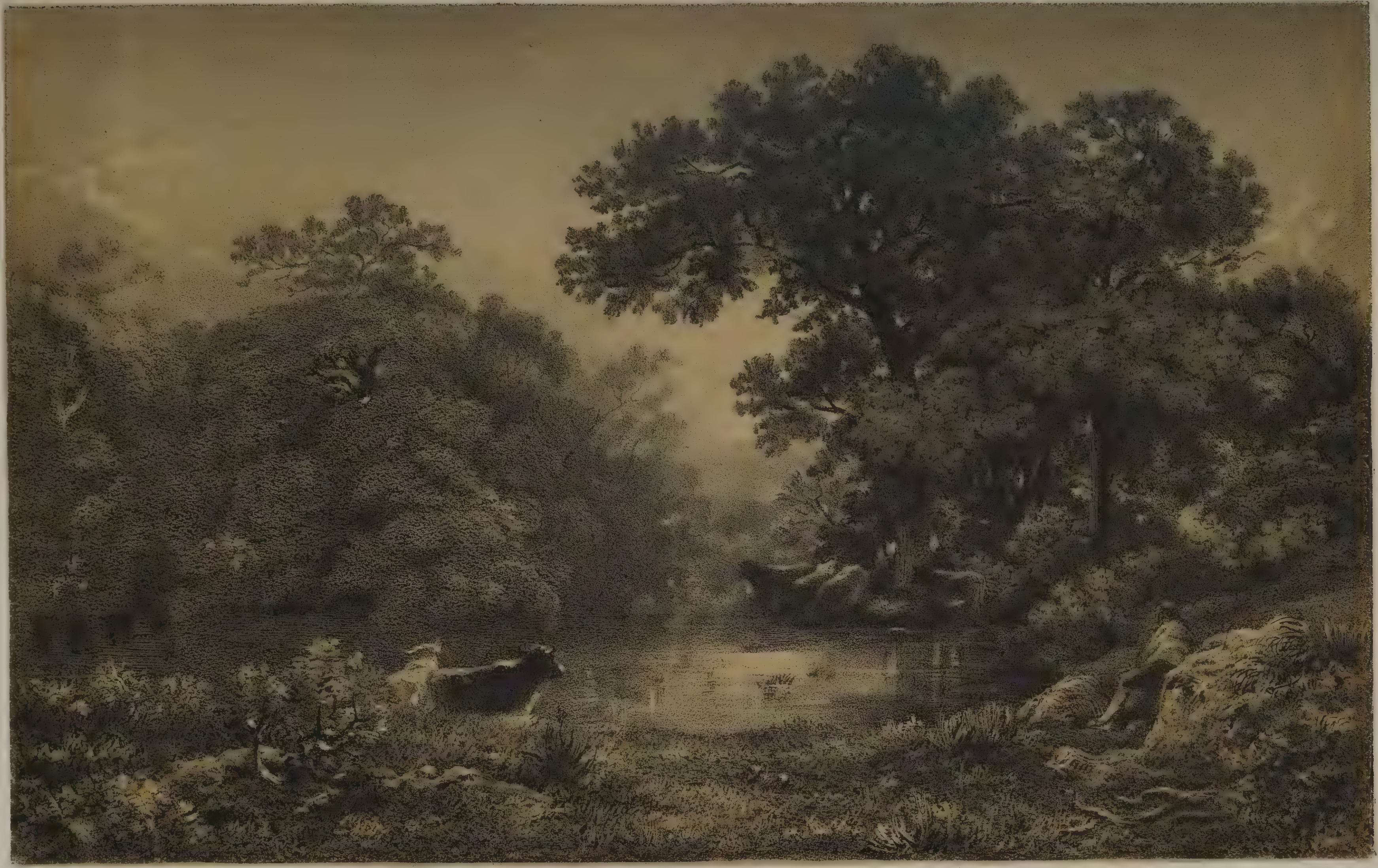
PLATE 6.



SPECIMEN OF CHALK DRAWING UPON STONE.

Printed by Waterlow & Sons' Patent Autographic Press.

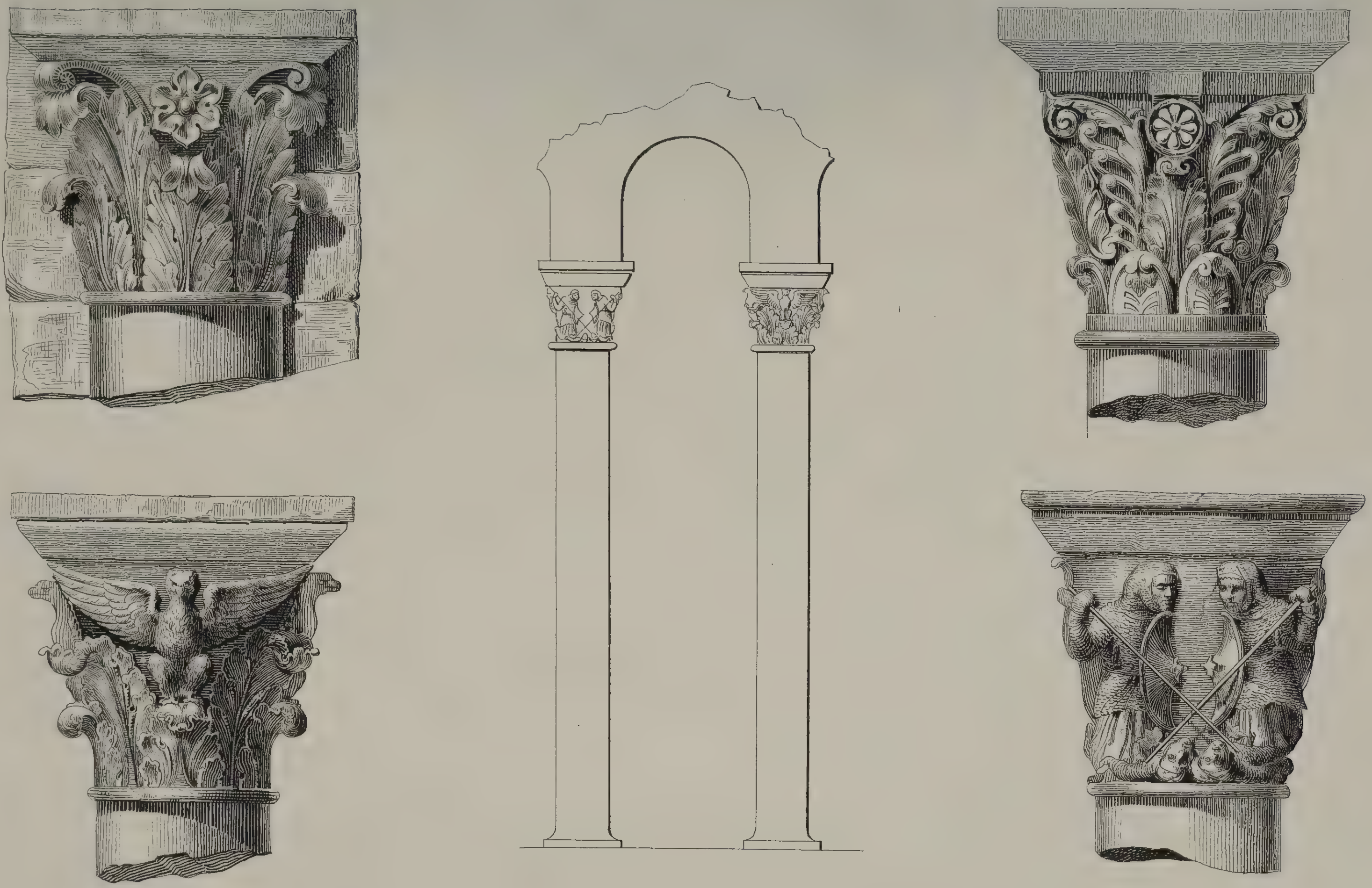
PLATE 7.



SPECIMEN OF CHALK DRAWING WITH TINT

Printed by Waterlow & Sons Patent Autographic Press.

PLATE 8.



SPECIMEN OF ENGRAVING UPON STONE

Printed by Waterlow & Sons' Patent Autographic Press

Drawing Instruments &c used in Lithography.

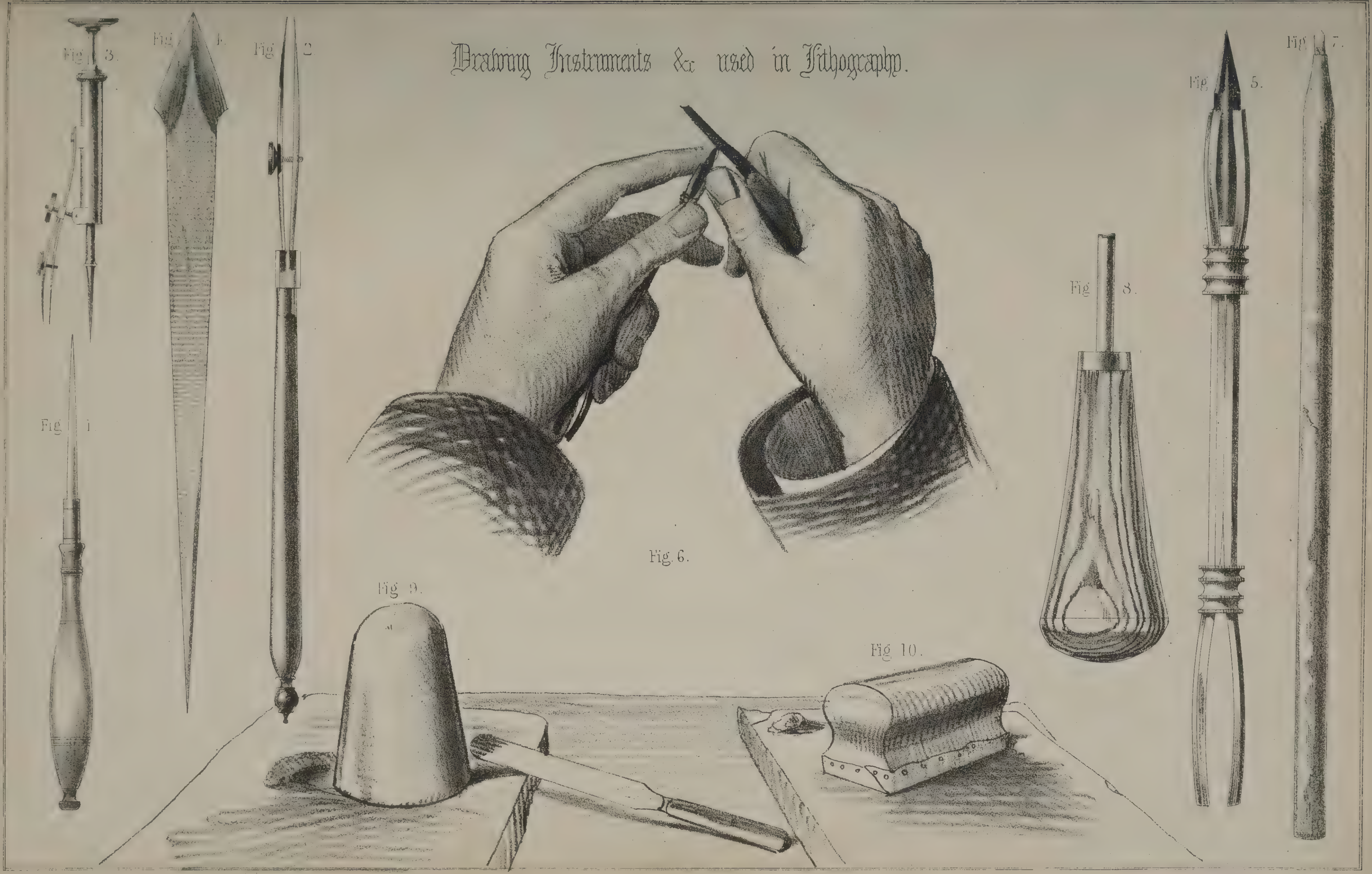


Fig 3.
Fig 4.
Fig 2
Fig 1.
Fig 6.
Fig 9.
Fig 10.
Fig 8.
Fig 5.
Fig 7.

Printed by Waterlow & Sons, Patent Autographic Press

WATERLOW & SONS' PATENT AUTOGRAPHIC PRESS.

OPINIONS OF THE PRESS.

The "TIMES."

A very useful invention has been patented by Messrs. WATERLOW and SONS, which will be productive of great convenience to banking establishments and other concerns requiring to send out circulars with despatch. It is called the "Autographic Press," and a letter written on prepared paper, with which it is furnished, can be transferred, by a short process, to a piece of stone, from which any number of copies may afterwards be taken on common paper, and by ordinary pressure. In the colonies, and other places where facilities for such operations are now scarce, and in all cases where the documents to be copied are of a confidential nature, it is likely to prove particularly valuable.

"MORNING CHRONICLE."

AUTOGRAPHIC PRESS.—An invention has been patented which is likely to prove of great utility to public companies and men of business generally. It will become a great desideratum to merchants in the colonies, and will be found very useful at the chief offices of banks, in suspending the necessity for copying any number of circulars which it may be necessary to send to the branches from time to time. We understand it has received the patronage of His Royal Highness Prince Albert, and it is the invention of Messrs. WATERLOW and SONS, London Wall, by whom it has been patented.

"ILLUSTRATED LONDON NEWS."

WATERLOW'S AUTOGRAPHIC PRESS.—Amongst the most practically useful inventions which have recently come under our notice, whether we regard it in reference to the commercial world, or as an instrument in the hands of a private gentleman, "The Autographic Press," patented by WATERLOW and SONS, is entitled to foremost mention. By this apparatus, any person may with facility print any number of letters, circulars, pen and ink sketches, musical notations, or other matters in which duplicate copies are wanted. The mode in which the transfer is effected may be briefly described. For instance: a letter is written on prepared paper, and then transferred to a polished stone. The paper is then washed off the stone with water, when the writing remains on the stone, and is charged with ink from a roller somewhat similar to the ordinary printing roller. Paper is now laid on the stone, and upon the application of pressure, the impression is derived, and the process may be repeated sixty or seventy times in the hour, the stone being subjected to the ink roller for each impression. When sufficient copies are cast off, the plate is cleaned, and ready for a fresh operation. The specimens we have seen are equal to lithography.

"ATLAS."

BANKERS' AND MERCHANTS' CIRCULARS. –An invention has been submitted to us, which is likely to prove of great utility to public companies and men of business generally. It consists of a press and materials, by means of which any person may, from a document previously written on paper, produce any required number of copies. Circulars, letters, prospectuses, &c., can be produced by this invention with the greatest facility; and any number of designs, music, plans, &c., may be expeditiously printed in the same manner. The apparatus is extremely simple, and is perfectly portable. It will become a great desideratum to merchants in the colonies, and will be found very useful at the chief offices of banks, in suspending the necessity for copying any number of circulars which it may be necessary to send to the branches from time to time. We understand it has received the patronage of H.R.H. Prince Albert, and it is the invention of Messrs. WATERLOW and SONS, London Wall, by whom it has been patented.

"SAUNDERS'S DUBLIN NEWS LETTER."

During the course of the week, we have had exhibited to us a novel but highly useful machine, called the "Autographic Press," invented and patented by WATERLOW and SONS, of London. The object of the inventors is to enable merchants, bankers, clerks, &c., to take an *ad infinitum* number of copies of their circulars, letters, documents, &c. It entirely supersedes the old mode of copying by the ordinary press, and far outstrips the "manifold" system. In fact, it is a complete lithographic press, put up in a neat portable form, and can be purchased at a moderate price. To the commercial community it must prove a great desideratum."

"BOMBAY GAZETTE."

We see that a very useful invention has been patented by Messrs. WATERLOW and SONS, of London, which will be productive of great convenience to banking establishments, and other concerns requiring to send out circulars with despatch. It is called the "Autographic Press," and a letter written on prepared paper, with which it is furnished, can be transferred, by a short process, to a stone, from which any number of copies may afterwards be taken on common paper, and by ordinary pressure. In the colonies, and other places where facilities for such operations are now scarce, and in all cases where the documents to be copied are of a confidential nature, this invention is represented as being likely to prove particularly valuable.

"RAILWAY RECORD."

GENERAL ORDERS TO STATION CLERKS.—Messrs. WATERLOW and SONS, London Wall, have recently patented an invention which is likely to prove of great utility to all public Companies. A press and material are put together in a neat box, in such a way that any person may, with the greatest facility, reproduce from MS. any number of copies that may be required. It is called the "Autographic Press"—is very neat, and perfectly portable. Railway Companies would find it exceedingly convenient in issuing orders to their stations; and it would, in point of expense, very soon repay its moderate cost.

"WESTMINSTER REVIEW."

THE AUTOGRAPHIC PRESS, OR PORTABLE PRINTING MACHINE.—Under this name, the Messrs. WATERLOW, of London Wall, have patented a very simple but effective apparatus, the merits of which cannot fail to be duly appreciated as soon as they are known. The subject to be printed is transferred from paper to the surface of a highly-polished stone, and being charged with ink in the usual manner, the paper on which it is to be printed is placed upon it, and the tympan being laid down, a perfect impression is at once obtained. The utility of such a simple application of the lithographic principle must be obvious to mercantile men, and others who require a number of copies of their correspondence.

"BANKERS' MAGAZINE."

AUTOGRAPHIC PRESS.—An invention of great utility. Bankers' circulars may be printed from it with the greatest facility. It will become very useful at the chief offices of banks, in suspending the necessity for copying any number of circulars which it may be necessary to send to the branches from time to time. It has received the patronage of H.R.H. Prince Albert, to whom it has been submitted by the Patentees, Messrs. WATERLOW and SONS, London Wall.

PATENTEES—WATERLOW AND SONS, 65 TO 68, LONDON WALL, LONDON.

Agents for LIVERPOOL—McCORQUODALE & Co., Castle Street; MANCHESTER—JOSEPH THOMSON;
EDINBURGH—HUGH PATON.

List of Prices of the Patent Autographic Presses and Materials.

	£	s.	d.
No. 1. Small Press to print a subject, 11 ins. by 9 ins., with all necessary materials,	7	7	0
No. 2. Middle Press, to print a subject 16½ ins. by 10½ ins., with ditto ditto	8	8	0
No. 3. Large Press, to print a subject 18 ins. by 13½ ins., with ditto ditto	9	9	0
Polished Mahogany Stand for small press, with drawers, fitted up for materials, with patent lock and key..	2	5	0
Ditto ditto for middle press, ditto ditto ditto	2	7	6
Ditto ditto for large press, ditto ditto ditto	2	15	0
Polished Mahogany Case, for materials, neatly fitted, with drawer and lock, small size,	0	14	0
Ditto ditto ditto ditto ditto middle size,	0	16	0
Ditto ditto ditto ditto ditto large size,	0	18	6

PRICES OF MATERIALS FOR REPLENISHING;

The quantities being the same as supplied with the Presses when first sent out.

	No. 1.		No. 2.		No. 3.	
	s.	d.	s.	d.	s.	d.
Transfer paper	2	6	3	9	5	6
Transfer ink	0	9	1	0	1	6
Writing pens and holder	1	0	1	0	1	0
Stones	5	0	8	0	12	0
Gum arabic solution ..	0	9	1	0	1	6
Etching preparation ..	0	9	1	0	1	6
Roller	9	0	11	0	13	0
Leather handles for ditto	1	0	1	0	1	0
Printing ink	1	6	2	0	3	0
Varnish	1	0	1	6	2	0
Ink slab	3	0	4	0	5	0

	No. 1.		No. 2.		No. 3.	
	s.	d.	s.	d.	s.	d.
Pallet knife	1	0	1	0	1	6
Sponges (3)	1	6	1	6	2	0
Wetting cloth	0	2	0	4	0	6
Soft sheets	0	9	1	0	1	6
Pasteboard	0	6	0	9	1	0
Sheets of zinc	0	8	1	0	1	6
Snake stone slips ..	0	4	0	4	0	4
Pumice stone	0	2	0	3	0	4
Water of Ayr stone ..	1	0	1	4	1	9
Lever	0	6	0	6	0	6

PRICES OF EXTRA MATERIALS, SUPPLIED TO ORDER.

FOR EXPORTATION OR OTHERWISE.

Transfer paper, post quarto, fly leaf, 16 by 10, per quire, 2s. 6d.
  Ditto, sheet foolscap, 16½ by 13, ditto, 3s.
  Ditto, sheet post, 20 by 16, ditto, 5s.
  Ditto, double crown, 30 by 20, for tracings, per quire, 12s.
  Ditto, double foolscap, 28 by 18, for chalk drawings, per sheet, 1s.; per quire, 18s.
Transfer ink, in tin bottles, per half-pint, 10s.; per pint, 15s.
  Ditto, in solid sticks, each 1s. 6d.
Stone ink, ditto, large, each, 3s.
Tint ink, ditto, ditto, each 3s.
Indian ink, per stick, 1s., 2s. 6d.; and octagons ditto, 5s.
Ink saucers, each 2d.; per dozen, 1s. 6d.
Pens, the Autographic, per dozen, carded, 1s.; per gross, 6s.
  Ditto, the extra fine Mapping (white), per dozen, carded, 1s. 6d.; per gross, 12s. 6d.
  Ditto, the Imitation Crow Quill, per dozen, carded, 1s.; per gross, 8s.
Ribbon steel for pens, per square inch, 6d.
Scissors, for cutting same, per pair, 3s. 6d.
Holders for same, per dozen, 2s.
Ruling pens, for stone or paper, each 5s.
Bow pens, for drawing circles, &c., on ditto ditto, each 12s.
Tracing paper, 30 by 20, per quire, 3s.; 30 by 40, ditto, 6s.
Retracing paper, 30 by 20, red & black, per qr., 8s.
Drawing pins, 1s. and 2s. 6d. per dozen.
Tracing points each 6d.; holders for same, 1s.
Chalks. 1, 2 and 3, per dozen, 1s.
Chalk holders, ditto, 1s. 6d.
Porte crayons, each 6d.
Brushes, wide and flat badger hair, each 6d.; camel ditto, 1s. 6d.
Stone brushes, each 6d.
Scrapers, each 1s. 6d.
Gravers, each 1s.
Diamond points, each 10s. 6d.
Register needles, per pair, 1s.
Hones, in mahogany case, each 3s.
Printing ink, per lb. 10s.; ditto, thick for drawings, per lb. 12s.
Varnish, in tin bottles, per pint, 3s. 6d.; ditto per quart, 6s.
Gum, in bottle and basket, per quart, 4s.; ditto, per gallon, 12s.
Etching preparation, do., do., 5s.; do., 18s.
Spirits of turpentine, in bottles, 1s. Nitric acid, in bottles, 1s.
Mullers, each 2s.
Stones grained for drawings, extra No. 1 size, 1s. each; No. 2, 1s. 6d.; No. 3, 2s. 6d.
Paper adapted for printing ink work, at per ream, according to size
  Ditto ditto ditto for drawings, ditto, ditto
Set-off paper, 30 by 20, per ream, 8s.

Printed from Stone by Waterlow and Sons' Patent Autographic Press.

Jan 20 1914